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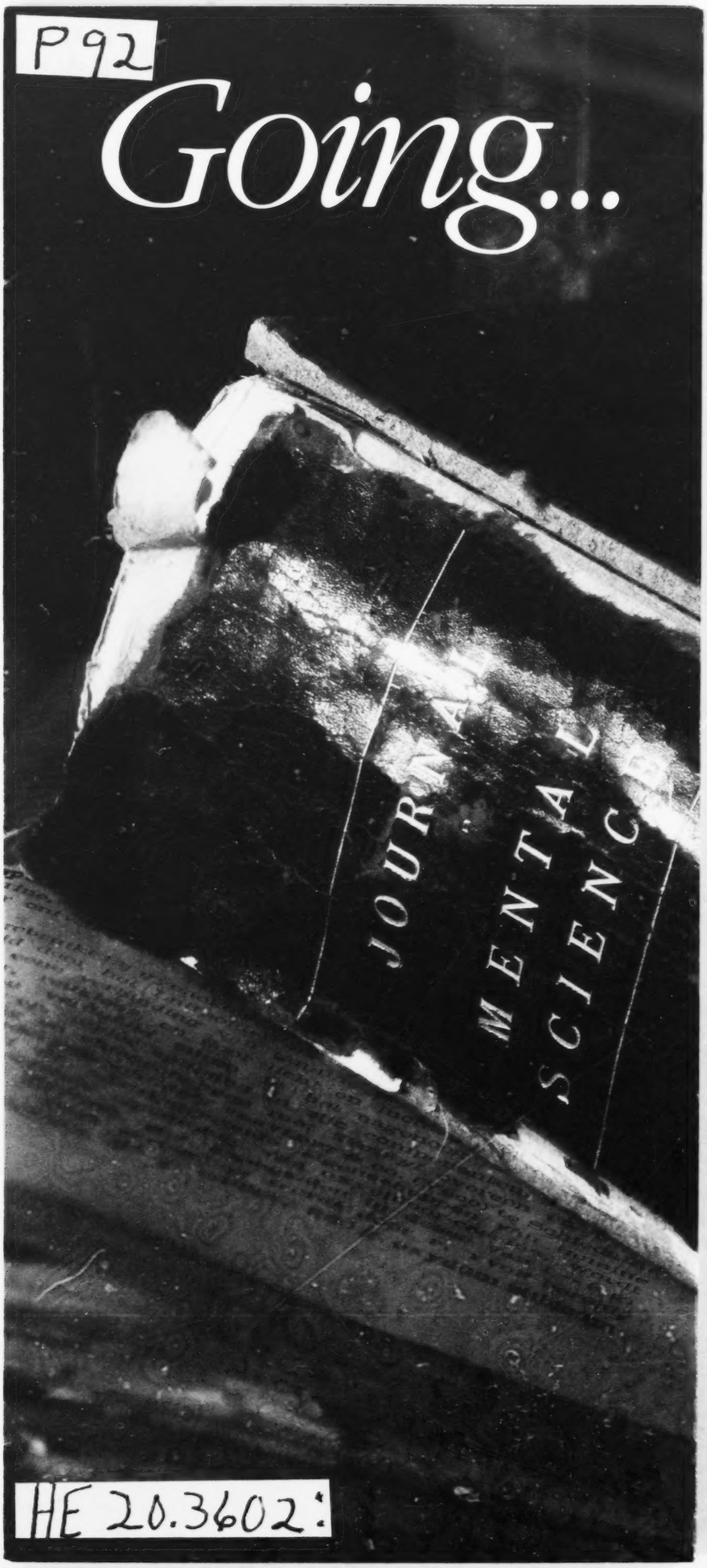
Going...



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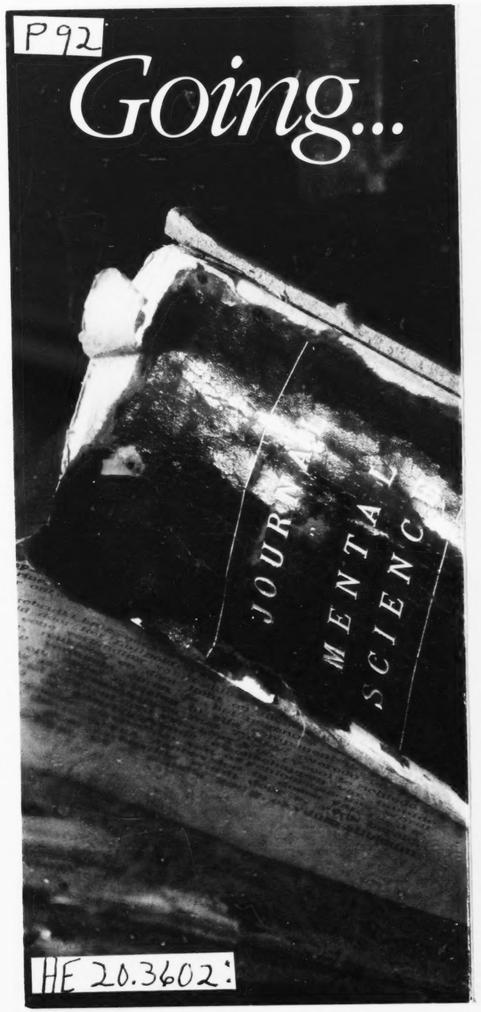

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Preserving Our Medical Heritage

Acid paper: brittle books. Millions of books printed since the mid 19th century are disintegrating and turning to dust on library shelves. Acids used in the paper manufacturing process since about 1850 are causing an alarming number of books to become embrittled and crumble at the touch. A recent survey of the National Library of Medicine collection has shown that approximately 158,000 volumes have become brittle as a result of the acid in most modern book paper. At the current average cost of $60.00 per volume, millions of dollars will be required to preserve their contents on microfilm.

Prior to the 1850s, most paper was produced manually using cotton and linen rags—the resulting paper was strong and acid-free. As demand for paper increased, the supply of linen and cotton dwindled. When the process became mechanized, manufacturers began using wood pulp as the major source for producing the cellulose fibers needed to make paper.

The alum/rosin size used in wood pulp paper manufacturing to keep ink from bleeding on the page is highly acidic. Over time, this acidic paper will become brittle and begin to break. It is the acid in modern paper that is the primary cause of the deterioration of volumes in medical libraries.

Another problem is that the wood chips used in paper production have to be boiled with chemicals and bleached with chlorine. This process causes further weakening of the cellulose fibers that determine the strength of the paper.

Paper made of groundwood pulp is the worst because the fibers are very short and the resulting paper weak. If it is produced without chemically removing the impurities, groundwood paper will disintegrate very rapidly.

It has been estimated that volumes produced on acid paper have a lifespan of only 50-75 years. By contrast, paper made of nonacidic materials will last for centuries.

Response to the problem. The use of high quality pulp and an alkaline paper making process will help to give paper permanence and prevent it from becoming brittle.

Acid-free paper is presently available from some commercial paper manufacturers at competitive prices. Although it is estimated that only 20% of all book paper manufactured in the U.S. today is acid free, greater demand for acid-free paper from publishers will lead to increased supply.

The National Library of Medicine recently created a Permanent Paper Task Force to encourage the production and use of acid-free paper in the publication of biomedical literature. At the first meeting in January of 1988, publishers, editors, printers, paper manufacturers, and medical librarians came together to discuss the acid paper problem. The goals of the Task Force are to develop a strategy for encouraging the use of alkaline paper and to disseminate information about the status of the brittle book problem to publishers, printers, authors, and medical information specialists.

The American National Standards Institute has developed a standard for paper permanence. Criteria for paper endurance and longevity include avoidance of groundwood and unbleached pulp; a pH level of 7.5 or higher; and a minimum alkaline reserve equivalent to 2% calcium carbonate. Use of the infinity symbol (∞) on the verso page of a publication denotes compliance with ANSI standard Z.39.48-1984, "Permanence of Paper for Printed Library Materials."

National Preservation Plan for the Biomedical Literature

The National Preservation Plan for the Biomedical Literature was approved in 1988 by Dr. Donald Lindberg, Director of the National Library of Medicine. Its goal is to preserve permanently the content of all important biomedical materials and to preserve in their original format those items that have artifactual or historical significance. The plan will be implemented through NLM's Regional Medical Library Network.

Major components of the plan include:

- *A national cooperative microfilming program.* NLM is in the process of microfilming all of the brittle serials and monographs in its collection. In addition, partial funding will be provided to assist medical libraries to microfilm important biomedical titles that are not being preserved by NLM.
- *Conservation.* Partial funding will be made available to U.S. biomedical libraries for the conservation of rare and valuable items that are not held by the National Library of Medicine.
- *Preservation education and reference services.* To assist biomedical libraries in developing preservation programs, NLM and Regional Medical Libraries' staffs will provide educational materials, information, and advice on a wide range of preservation topics.
- *Monitoring of emerging preservation technologies.* NLM will keep biomedical libraries informed of current developments in such areas as optical disk, mass deacidification, and paper strengthening systems.

Copies of the National Preservation Plan for the Biomedical Literature may be requested by sending a self-addressed mailing label to: National Library of Medicine, Public Information Office, 8600 Rockville Pike, Bethesda, MD 20894.

Protecting Our Collections

Care and Handling. Library users and staff must work together to protect the biomedical literature. The following tips will minimize further damage to books and journals in library collections.

- Books and other library materials should always be handled with clean hands and used in a clean work space.
- Please do not eat or drink in the library. Crumbs and spills from food or beverages can stain materials and attract paper-eating insects and rodents.
- Book spines can be broken easily. Never force back the covers of a new volume, especially if it is tightly bound. When photocopying, do not apply pressure to the spine to force a volume to life flat. Use bookmarks instead of laying a book face down to mark your place.
- Many common office supplies are damaging. Don't use metal paper clips on library materials—they can tear the paper and leave rust stains. Rubber bands emit a sulphur compound which further deteriorates paper. Pressure-sensitive tape will discolor pages and self-stickum notes can cause dirt to adhere to paper and pages to stick together.
- Avoid leaving stacks of books piled up on a desk where they can easily be tipped over.
- Don't transport more books at one time than you can safely carry. Dropping books can cause serious damage especially if the paper and bindings are already fragile.
- To remove a book from the shelf, push back the adjacent volumes and grasp the book by the middle of the spine. Pulling a book at the top of the spine can cause tearing and weakening of the headcap.
- Do not push books to the back wall of the shelf—lack of air circulation can contribute to mold growth in a warm humid environment, and abrasive damage may occur to the edges of the volumes as well.

National Preservation Program for the
Biomedical Literature
Preservation Section
National Library of Medicine
Bethesda, MD 20894
Tele: (301) 496-8124